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DRAWINGS - TWENTY-ONE (21) SHEETS

Applicant(s):	Akihiro Tanaka et al.
Title:	DATA BROADCASTING RECEIVING APPARATUS AND METHOD
Attorney's Docket No.:	NAK1-BN78

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FIG. 1

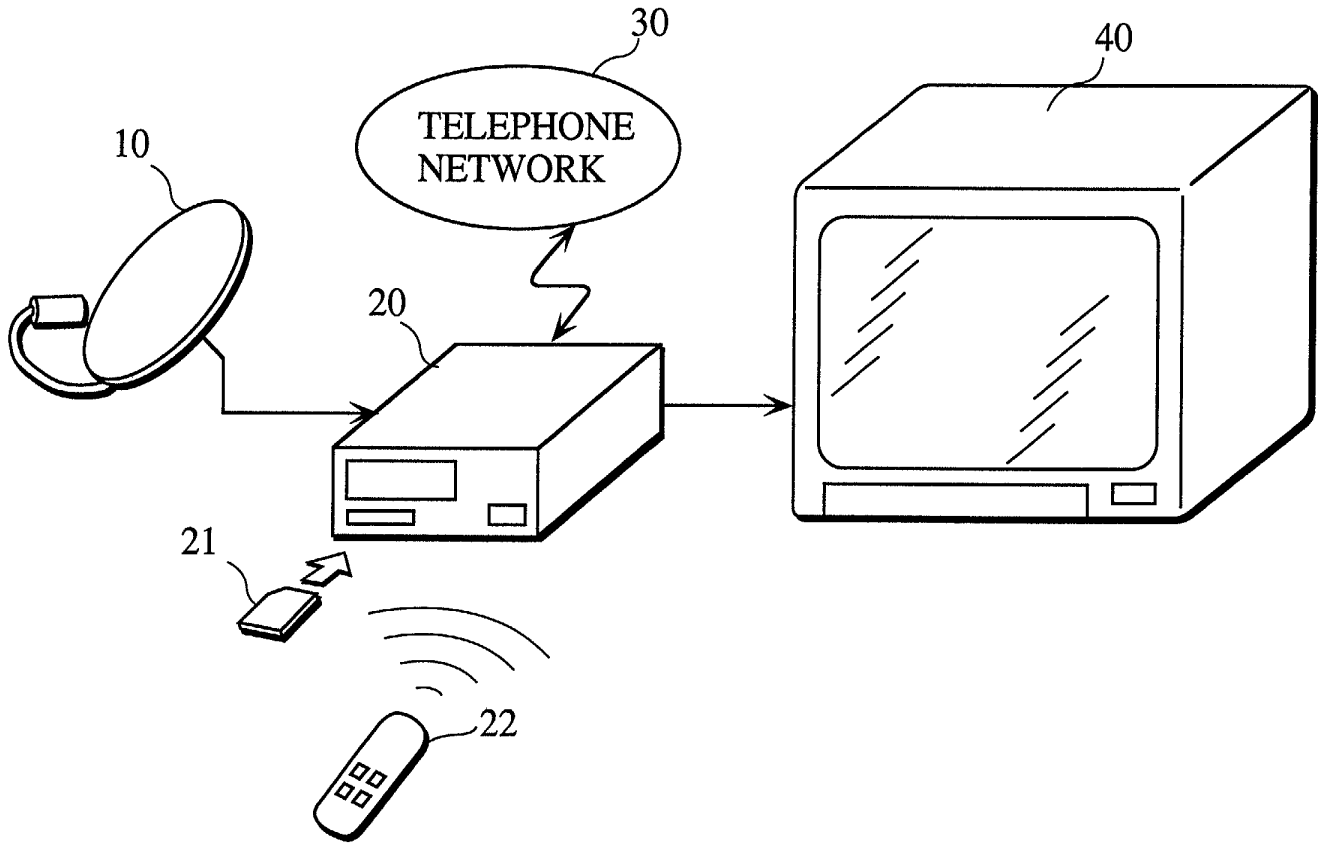


FIG. 2

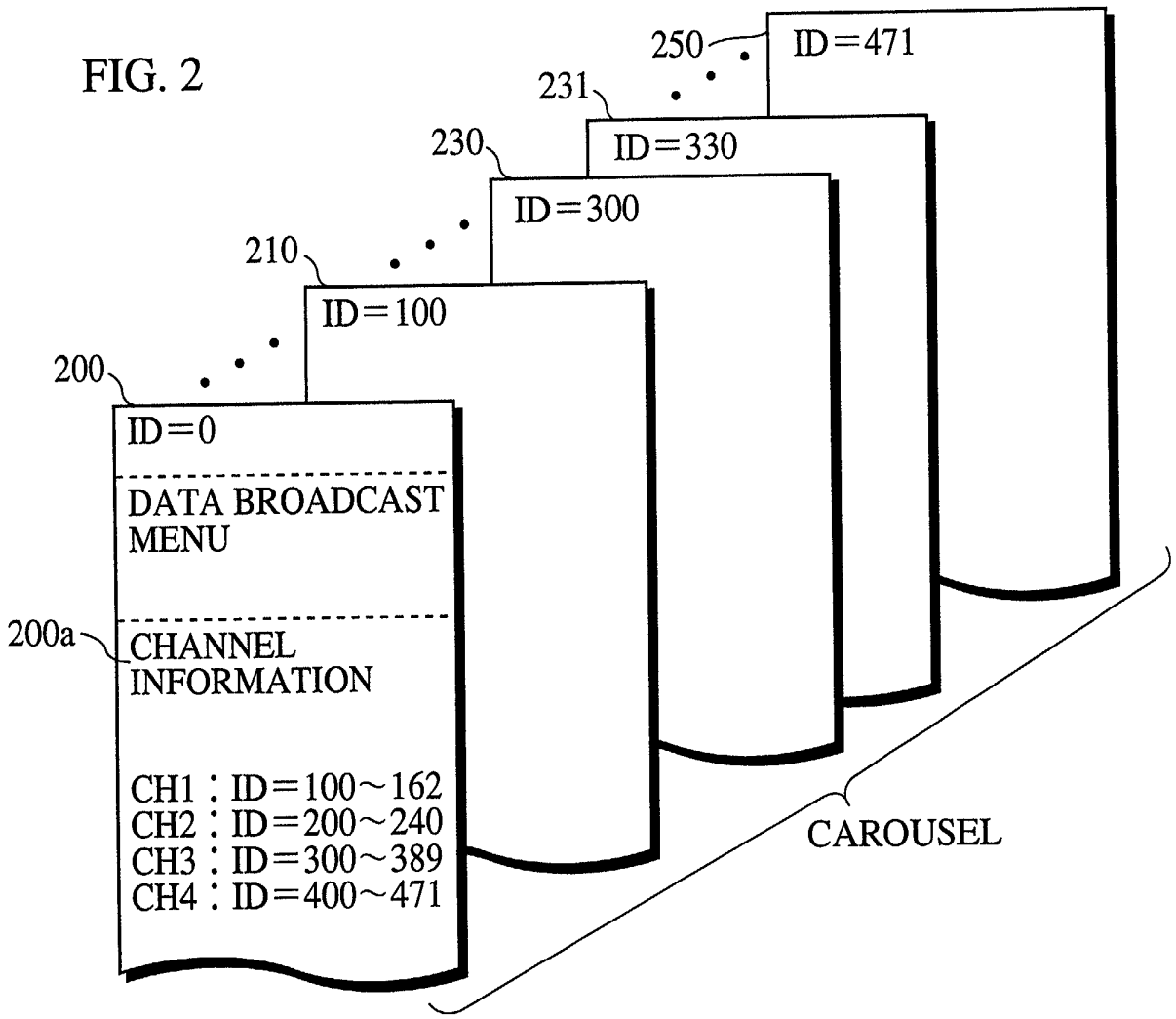

250
ID=471
231
ID=330
230
ID=300
210
ID=100
200
ID=0
DATA BROADCAST MENU
200a
CHANNEL INFORMATION
CH1 : ID=100~162
CH2 : ID=200~240
CH3 : ID=300~389
CH4 : ID=400~471
CAROUSEL

FIG. 3

ID	NAME	VERSION	TYPE	EXPIRY DATE
0	TOP_MN	13	JPEG	——
100	CH1_MN	8	JPEG	——
101	NEW_12	8	TXT	——
.				
.				
200	CH2_MN	7	JPEG	2000/01/14
.				
.				
210	KIN_WT	8	MIX	2000/01/14
220	KAN_WT	8	MIX	2000/01/14
.				
.				
300	CH3_MN	6	JPEG	——
330	CD_MN	15	JPEG	2000/01/10
340	BGM_MN	11	LIC	——
.				
.				

FIG. 4

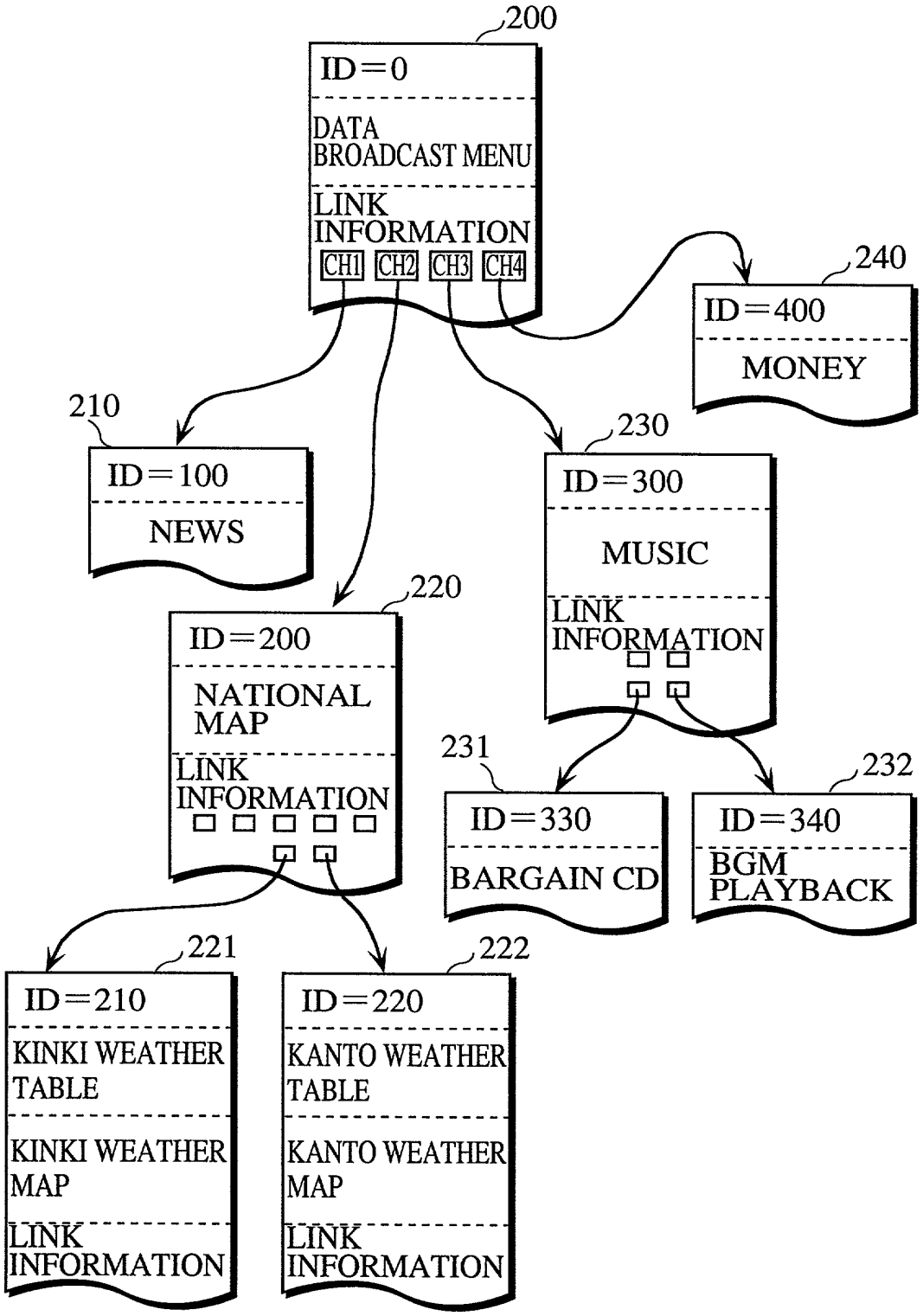
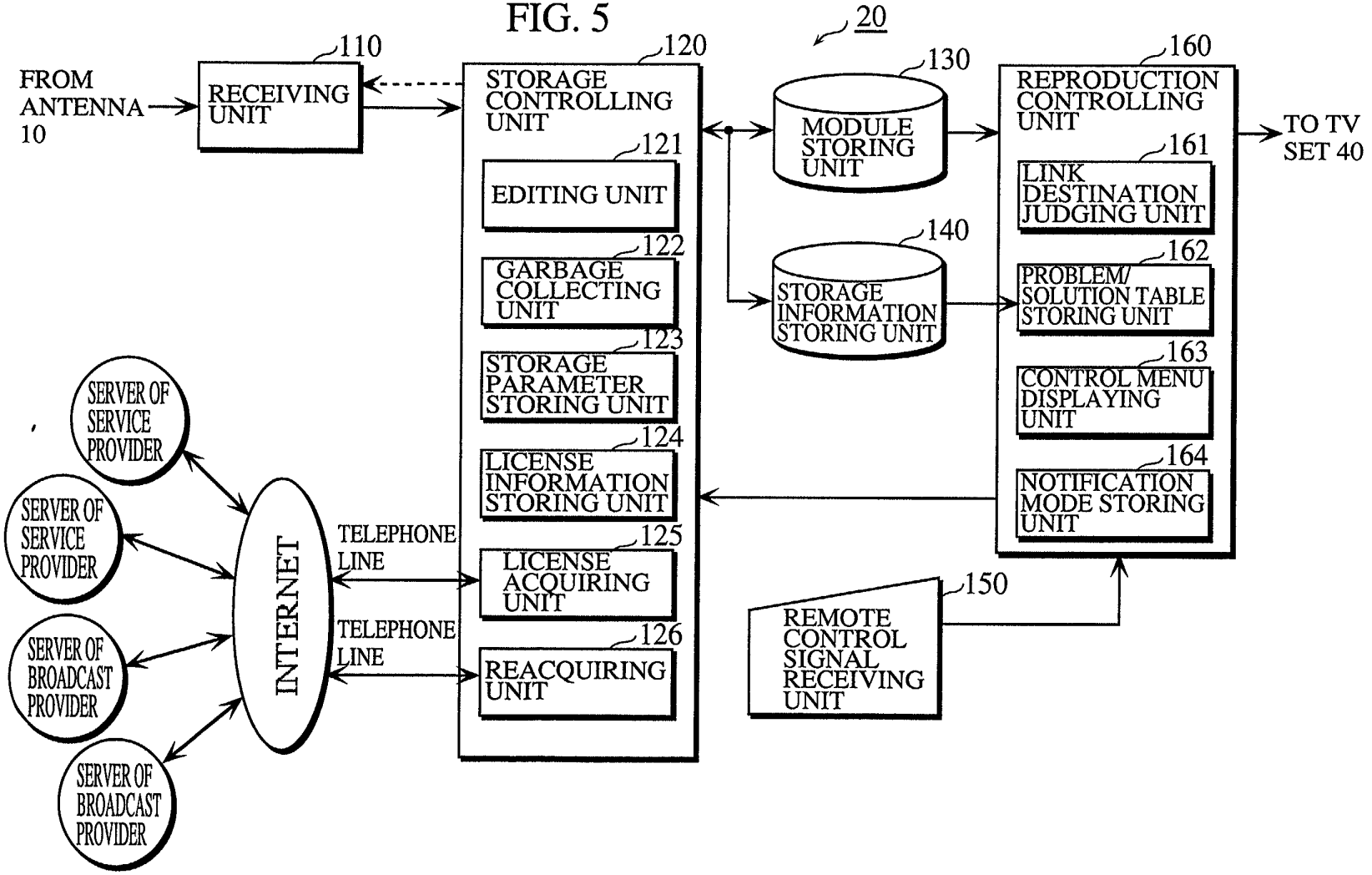

200
ID=0
DATA BROADCAST MENU
LINK INFORMATION
CH1
CH2
CH3
CH4
240
ID=400
MONEY
210
ID=100
NEWS
230
ID=300
MUSIC
LINK INFORMATION
220
ID=200
NATIONAL MAP
LINK INFORMATION
231
ID=330
BARGAIN CD
232
ID=340
BGM PLAYBACK
221
ID=210
KINKI WEATHER TABLE
KINKI WEATHER MAP
LINK INFORMATION
222
ID=220
KANTO WEATHER TABLE
KANTO WEATHER MAP
LINK INFORMATION

FIG. 5


20
FROM ANTENNA 10
110
RECEIVING UNIT
120
STORAGE CONTROLLING UNIT
121
EDITING UNIT
122
GARBAGE COLLECTING UNIT
123
STORAGE PARAMETER STORING UNIT
124
LICENSE INFORMATION STORING UNIT
125
LICENSE ACQUIRING UNIT
126
REACQUIRING UNIT
130
MODULE STORING UNIT
140
STORAGE INFORMATION STORING UNIT
150
REMOTE CONTROL SIGNAL RECEIVING UNIT
160
REPRODUCTION CONTROLLING UNIT
161
LINK DESTINATION JUDGING UNIT
162
PROBLEM/ SOLUTION TABLE STORING UNIT
163
CONTROL MENU DISPLAYING UNIT
164
NOTIFICATION MODE STORING UNIT
TO TV SET 40
TELEPHONE LINE
TELEPHONE LINE
INTERNET
SERVER OF SERVICE PROVIDER
SERVER OF SERVICE PROVIDER
SERVER OF BROADCAST PROVIDER
SERVER OF BROADCAST PROVIDER

STORAGE INFORMATION STORING UNIT 140

FIG. 6

ID	NAME	VERSION	TYPE	EXPIRY DATE	STORAGE STATE	PROBLEM ID	SOLUTION ID
0	TOP_MN	13	JPEG	——	STORED	——	——
100	CH1_MN	8	JPEG	——	NOT STORED	0	0
101	NEW_12	8	TXT	——	NOT STORED	0	0
.							
.							
200	CH2_MN	7	JPEG	2000/01/14	STORED	——	——
.							
.							
210	KIN_WT	8	MIX	2000/01/14	STORED	——	——
220	KAN_WT	8	MIX	2000/01/14	INCOMPLETE	2	1
.							
.							
300	CH3_MN	6	JPEG	——	STORED	——	——
330	CD_MN	15	JPEG	2000/01/10	NOT STORED	3	2
340	BGM_MN	11	LIC	——	NOT STORED	4	3
.							
.							

FIG. 7

PROBLEM/SOLUTION TABLE

PROBLEM ID	PROBLEM MESSAGE	REMARKS	SOLUTION ID	SOLUTION MESSAGE	REMARKS
0	COMPLETION OF BROADCAST	DETECTED BY STORAGE CONTROLLING UNIT 120	0	TRY STORAGE AGAIN	ACQUISITION BY REACQUIRING UNIT 126
1	HIGH BIT ERROR RATE	DETECTED BY RECEIVING UNIT 110			
2	LIMITED STORAGE SPACE	MODULE STORING UNIT 130	1	DELETE UNNECESSARY DATA	MESSAGE DISPLAY
3	EXPIRATION	DELETED BY GARBAGE COLLECTING UNIT 122	2	STORE LATER VERSION	ACQUISITION OF VERSION INFORMATION FROM STORAGE INFORMATION STORING UNIT 140, AND ACQUISITION OF LATER VERSION BY RECEIVING UNIT 110
4	NONPAYMENT	LICENSE INFORMATION	3	ACQUIRE LICENSE INFORMATION	ACQUISITION BY LICENSE ACQUIRING UNIT 125
5	DELETION BY USER EDIT	DETECTED BY EDITING UNIT 121	4	ACQUIRE AGAIN	ACQUISITION BY RECEIVING UNIT 110
⋮	⋮	⋮	⋮	⋮	⋮

FIG. 8

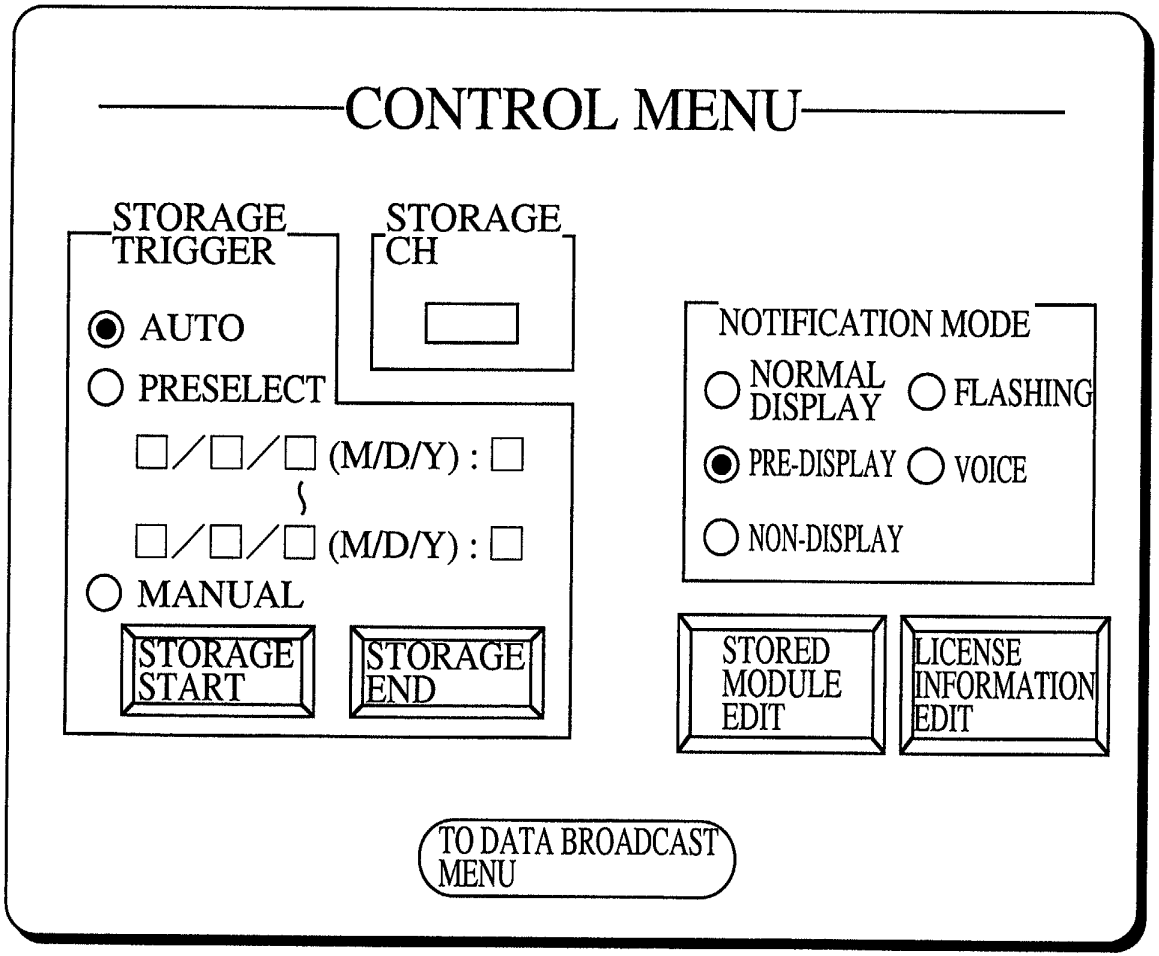

CONTROL MENU
STORAGE TRIGGER
AUTO
PRESELECT
□/□/□ (M/D/Y) : □
∫
□/□/□ (M/D/Y) : □
MANUAL
STORAGE START
STORAGE END
STORAGE CH
NOTIFICATION MODE
NORMAL DISPLAY
FLASHING
PRE-DISPLAY
VOICE
NON-DISPLAY
STORED MODULE EDIT
LICENSE INFORMATION EDIT
TO DATA BROADCAST MENU

FIG. 9

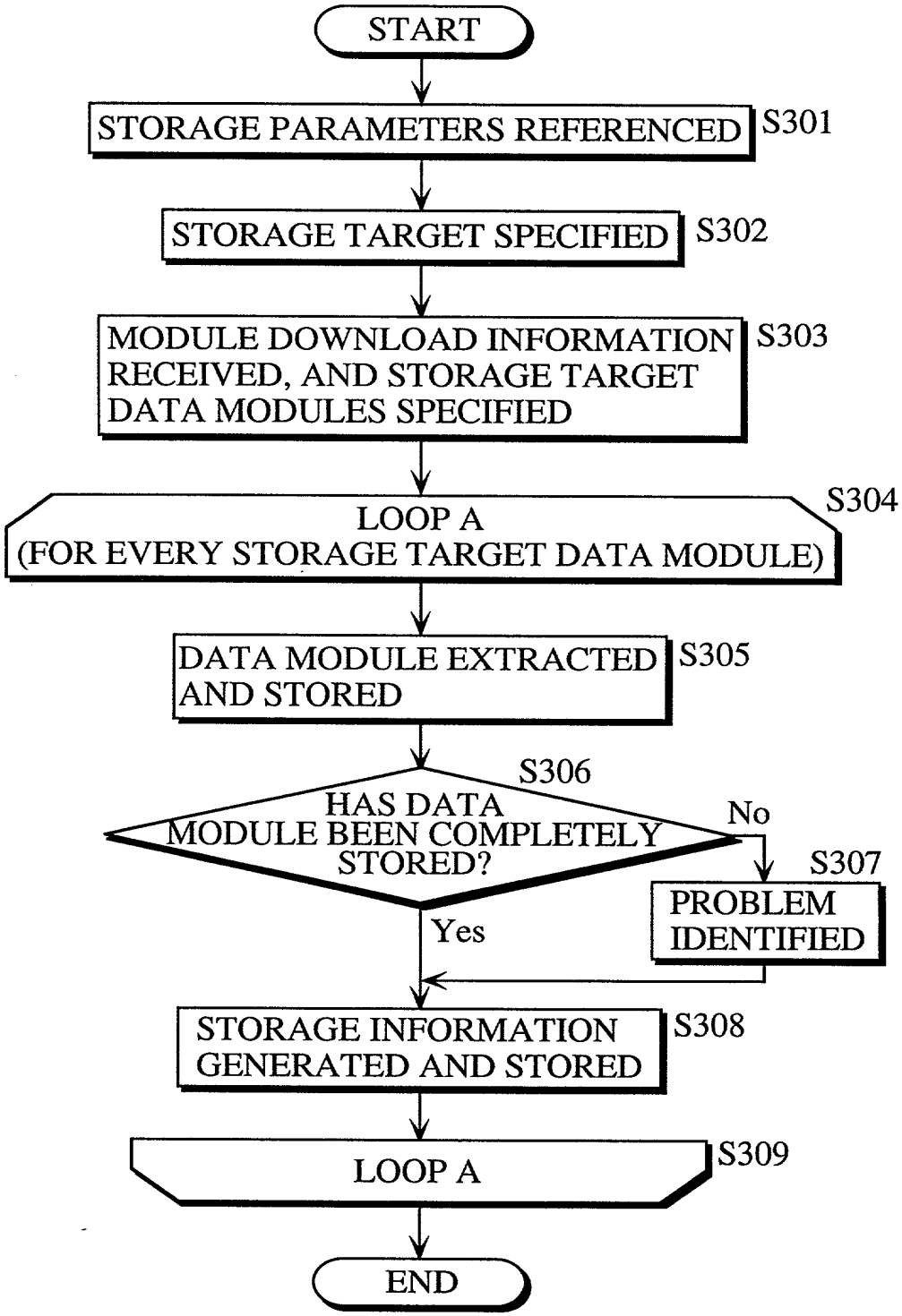

START
STORAGE PARAMETERS REFERENCED
S301
STORAGE TARGET SPECIFIED
S302
MODULE DOWNLOAD INFORMATION RECEIVED, AND STORAGE TARGET DATA MODULES SPECIFIED
S303
LOOP A
(FOR EVERY STORAGE TARGET DATA MODULE)
S304
DATA MODULE EXTRACTED AND STORED
S305
S306
HAS DATA MODULE BEEN COMPLETELY STORED?
No
S307
PROBLEM IDENTIFIED
Yes
STORAGE INFORMATION GENERATED AND STORED
S308
LOOP A
S309
END

FIG. 10

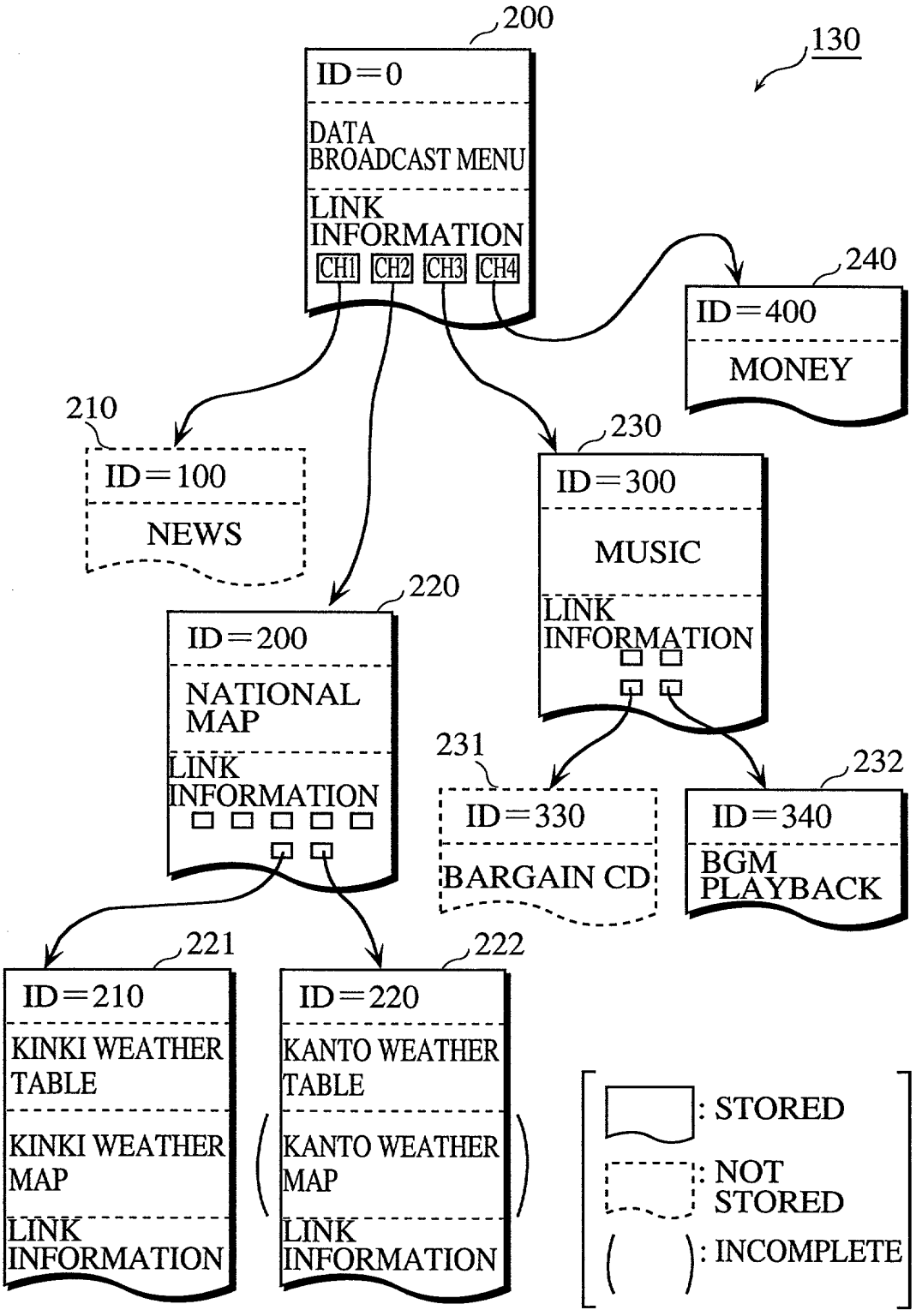

200
130
ID=0
DATA BROADCAST MENU
LINK INFORMATION
CH1
CH2
CH3
CH4
240
ID=400
MONEY
210
ID=100
NEWS
230
ID=300
MUSIC
LINK INFORMATION
220
ID=200
NATIONAL MAP
LINK INFORMATION
231
ID=330
BARGAIN CD
232
ID=340
BGM PLAYBACK
221
ID=210
KINKI WEATHER TABLE
KINKI WEATHER MAP
LINK INFORMATION
222
ID=220
KANTO WEATHER TABLE
KANTO WEATHER MAP
LINK INFORMATION
: STORED
: NOT STORED
: INCOMPLETE

FIG. 11

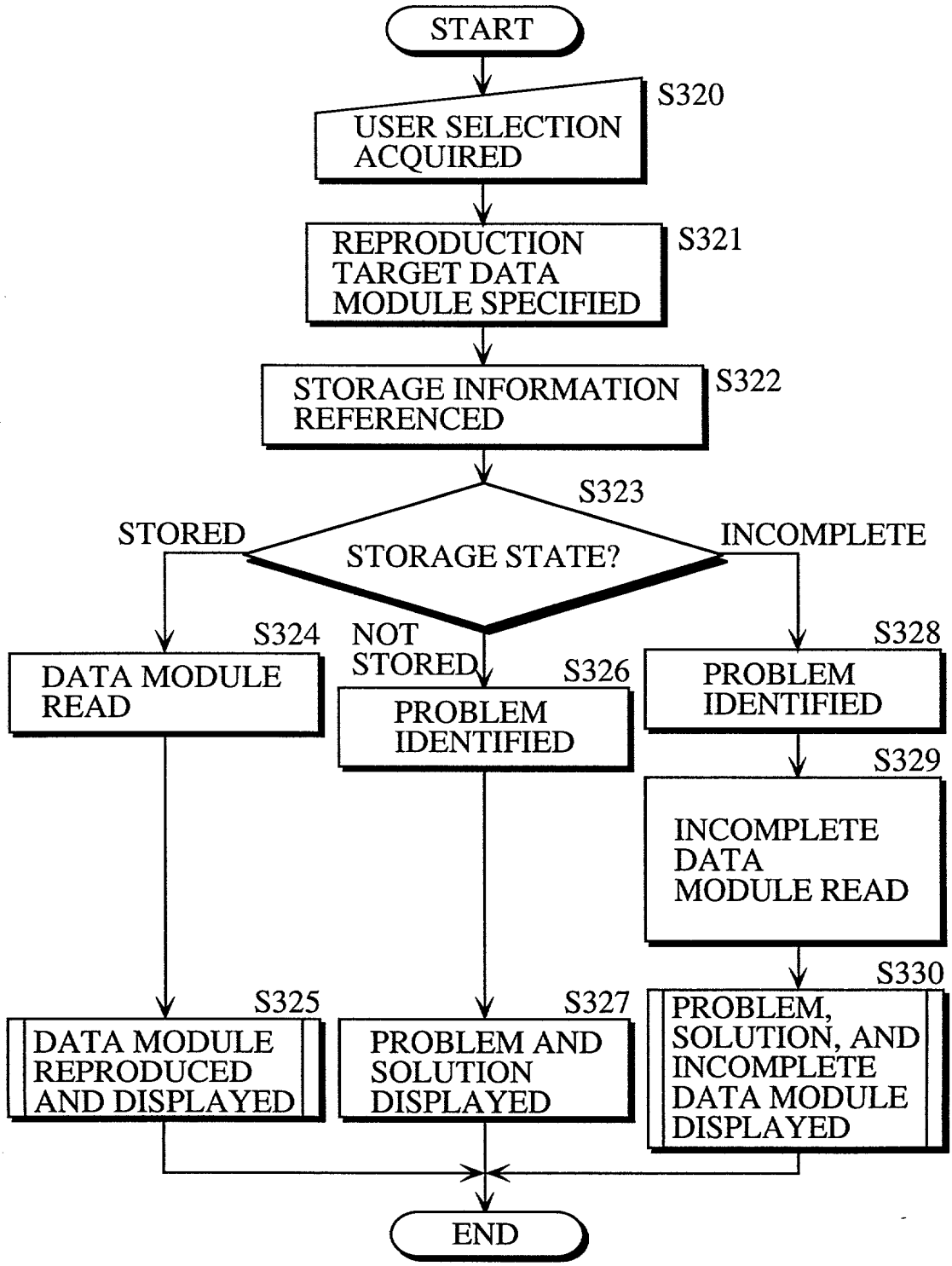

START
USER SELECTION ACQUIRED
S320
REPRODUCTION TARGET DATA MODULE SPECIFIED
S321
STORAGE INFORMATION REFERENCED
S322
S323
STORAGE STATE?
STORED
NOT STORED
INCOMPLETE
S324
DATA MODULE READ
S326
PROBLEM IDENTIFIED
S328
PROBLEM IDENTIFIED
S329
INCOMPLETE DATA MODULE READ
S330
S325
DATA MODULE REPRODUCED AND DISPLAYED
S327
PROBLEM AND SOLUTION DISPLAYED
PROBLEM, SOLUTION, AND INCOMPLETE DATA MODULE DISPLAYED
END

FIG. 12

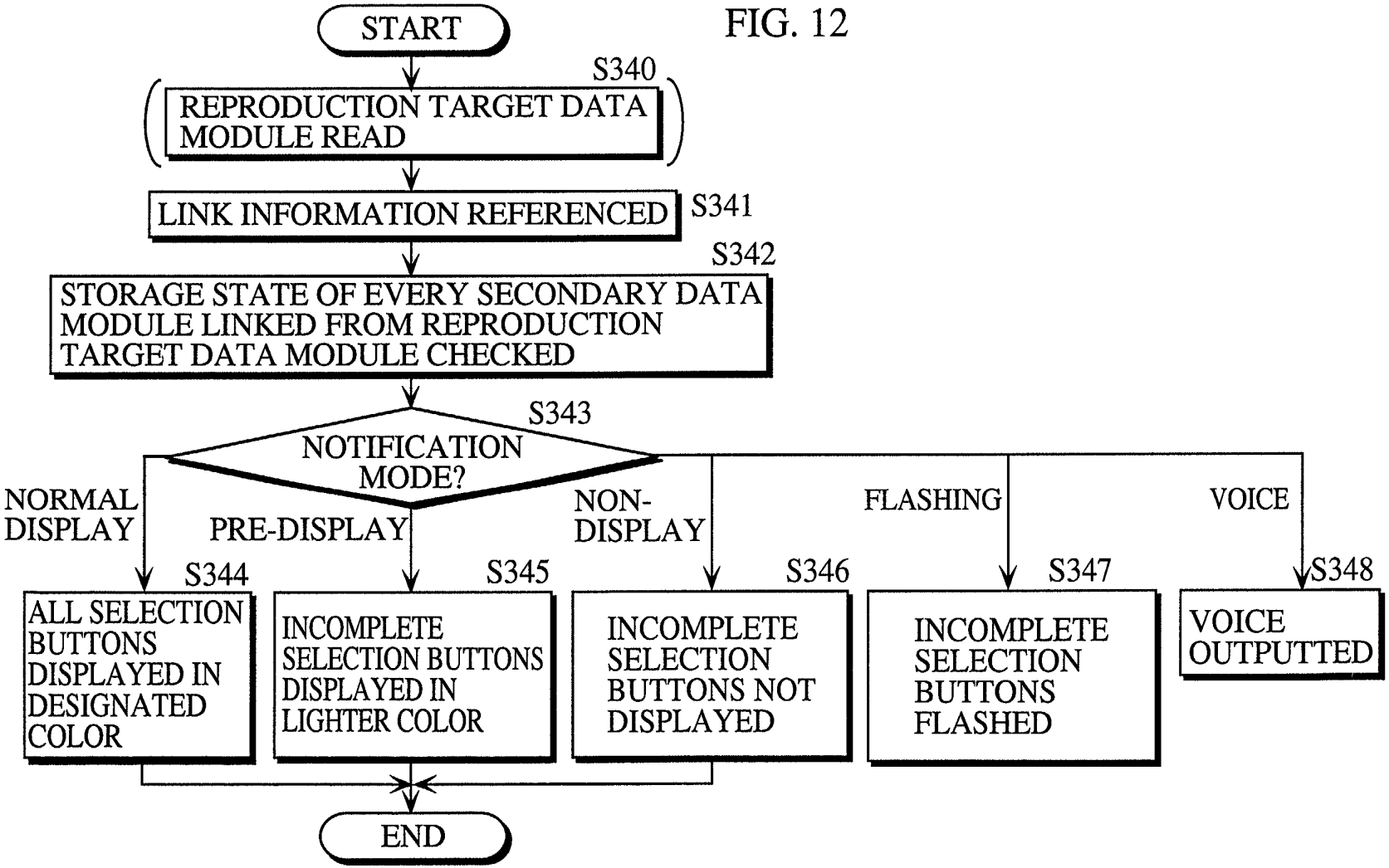

START
S340
REPRODUCTION TARGET DATA MODULE READ
LINK INFORMATION REFERENCED
S341
S342
STORAGE STATE OF EVERY SECONDARY DATA MODULE LINKED FROM REPRODUCTION TARGET DATA MODULE CHECKED
S343
NOTIFICATION MODE?
NORMAL DISPLAY
PRE-DISPLAY
NON-DISPLAY
FLASHING
VOICE
S344
S345
S346
S347
S348
ALL SELECTION BUTTONS DISPLAYED IN DESIGNATED COLOR
INCOMPLETE SELECTION BUTTONS DISPLAYED IN LIGHTER COLOR
INCOMPLETE SELECTION BUTTONS NOT DISPLAYED
INCOMPLETE SELECTION BUTTONS FLASHED
VOICE OUTPUTTED
END

FIG. 13

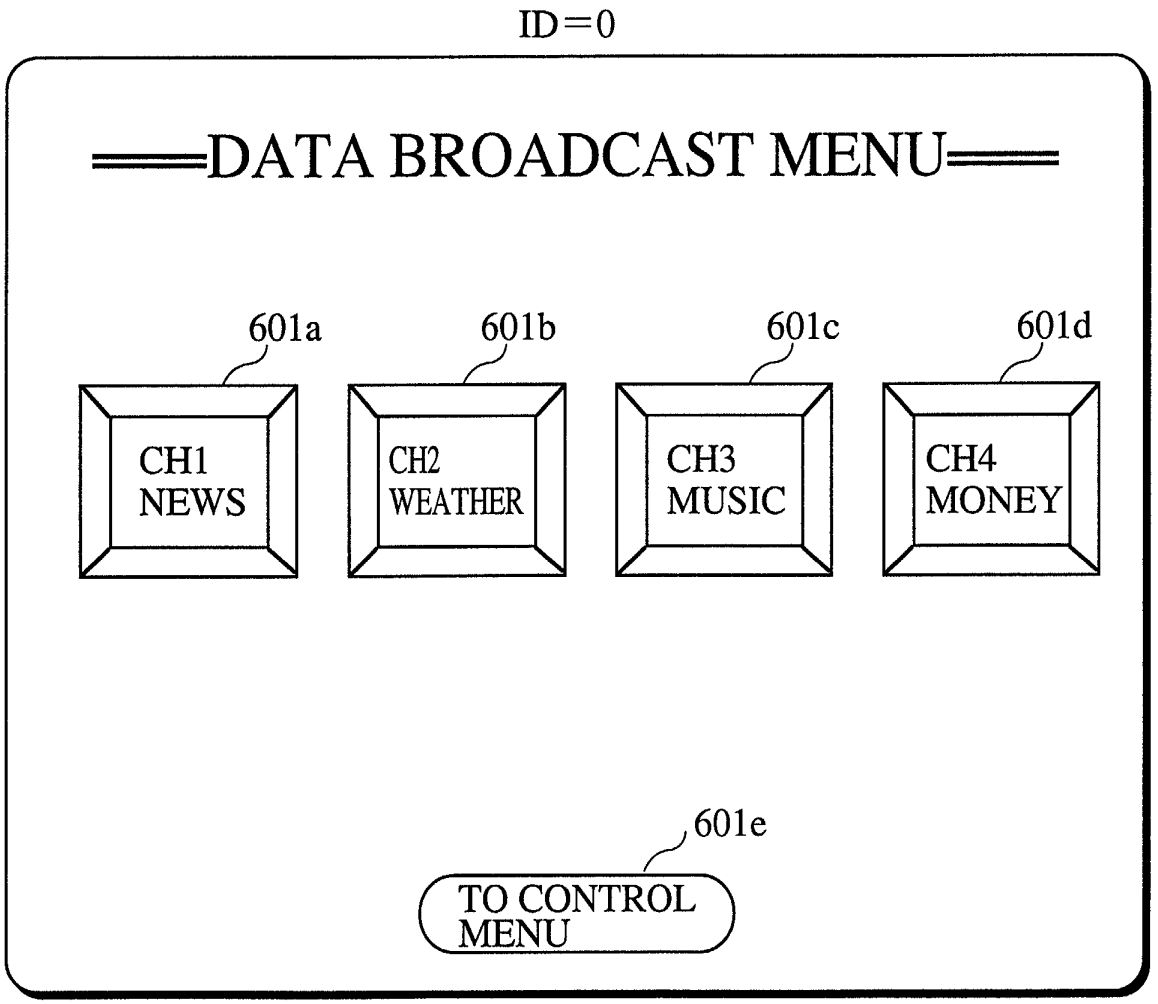

ID=0
DATA BROADCAST MENU
601a
601b
601c
601d
CH1
NEWS
CH2
WEATHER
CH3
MUSIC
CH4
MONEY
601e
TO CONTROL
MENU

FIG. 14

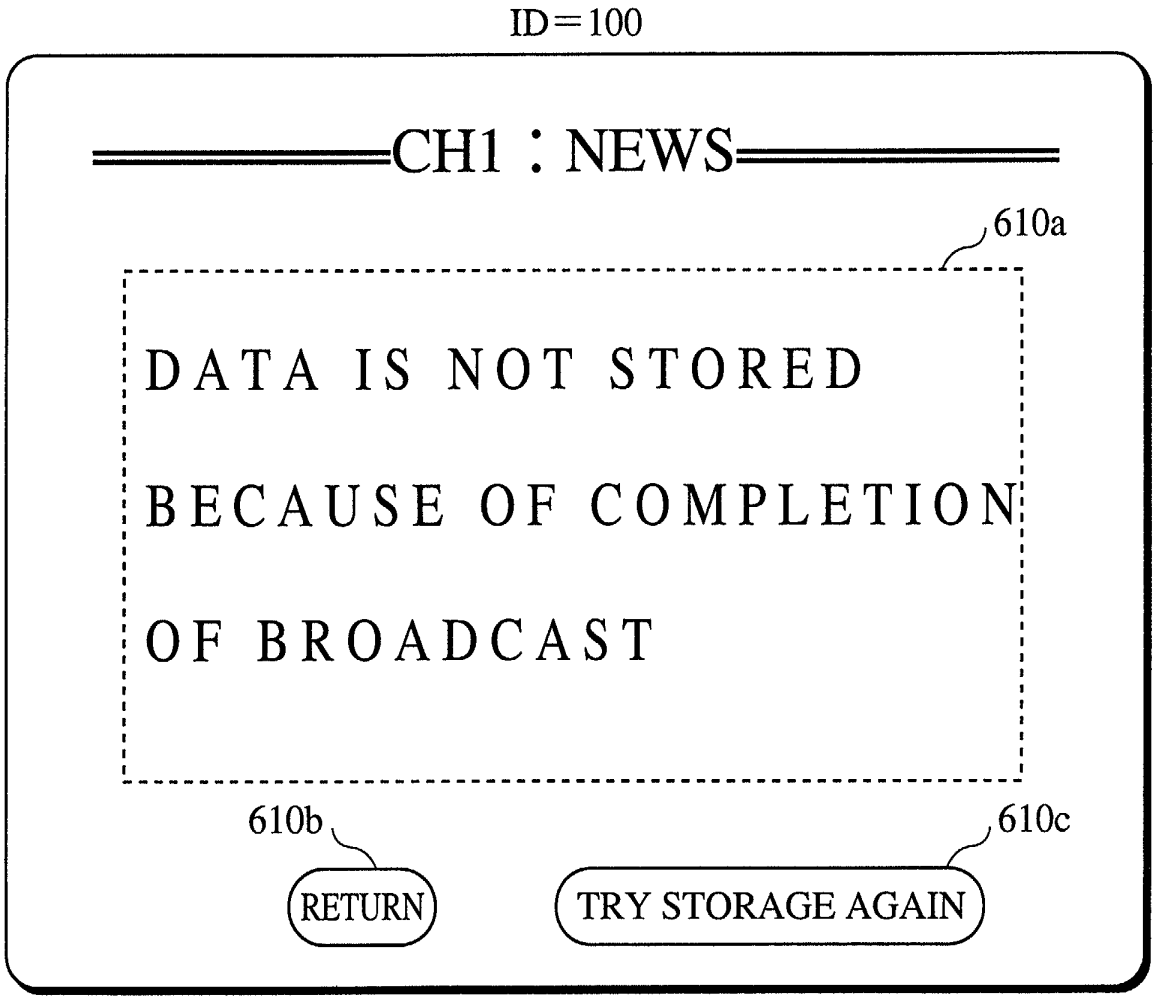

ID=100
CH1 : NEWS
610a
DATA IS NOT STORED
BECAUSE OF COMPLETION
OF BROADCAST
610b
610c
RETURN
TRY STORAGE AGAIN

FIG. 15

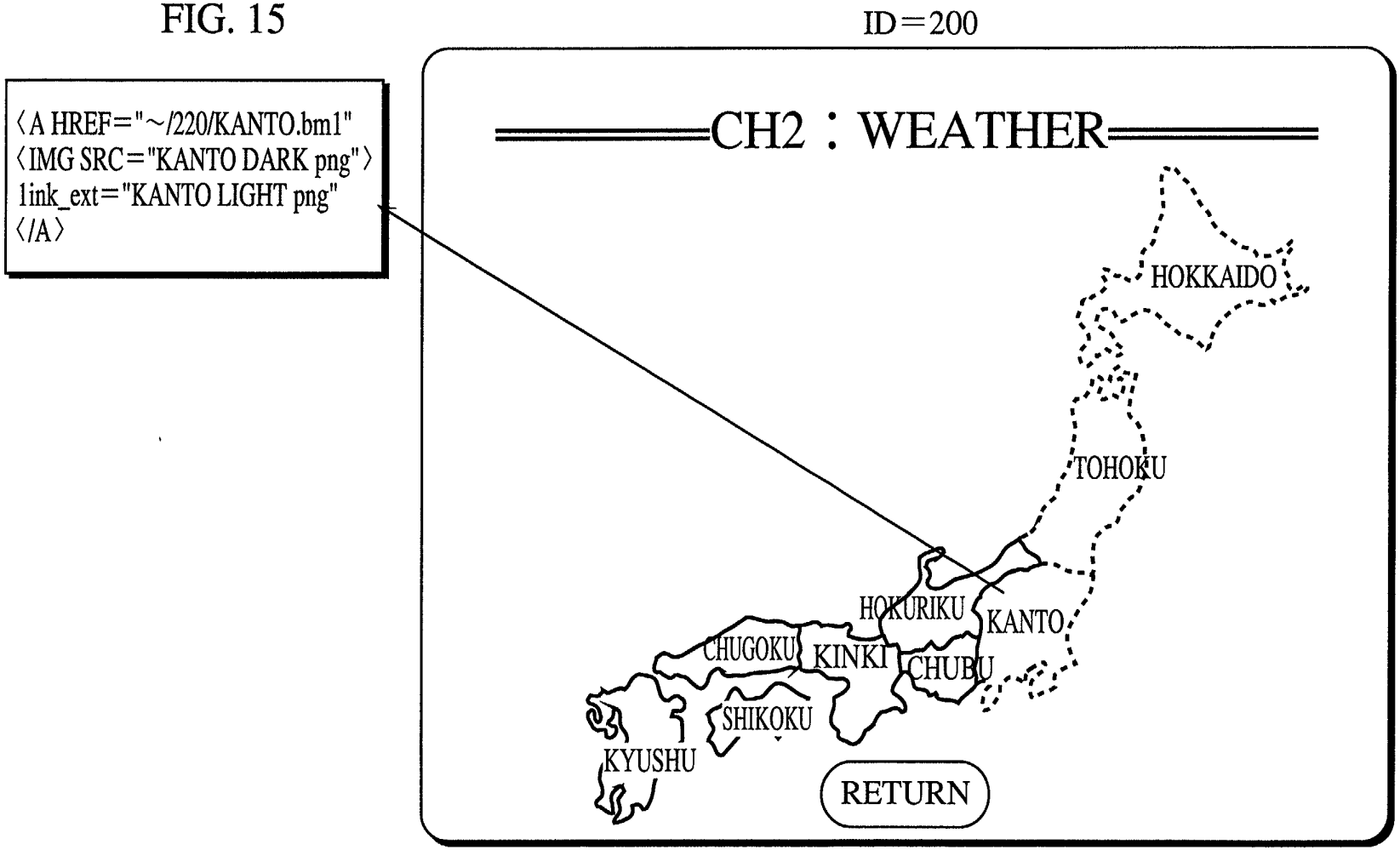

ID=200
〈A HREF="~/220/KANTO.bm1"
〈IMG SRC="KANTO DARK png"〉
1ink_ext="KANTO LIGHT png"
〈/A〉
CH2 : WEATHER
HOKKAIDO
TOHOKU
HOKURIKU
KANTO
CHUGOKU
KINKI
CHUBU
SHIKOKU
KYUSHU
RETURN

FIG. 16

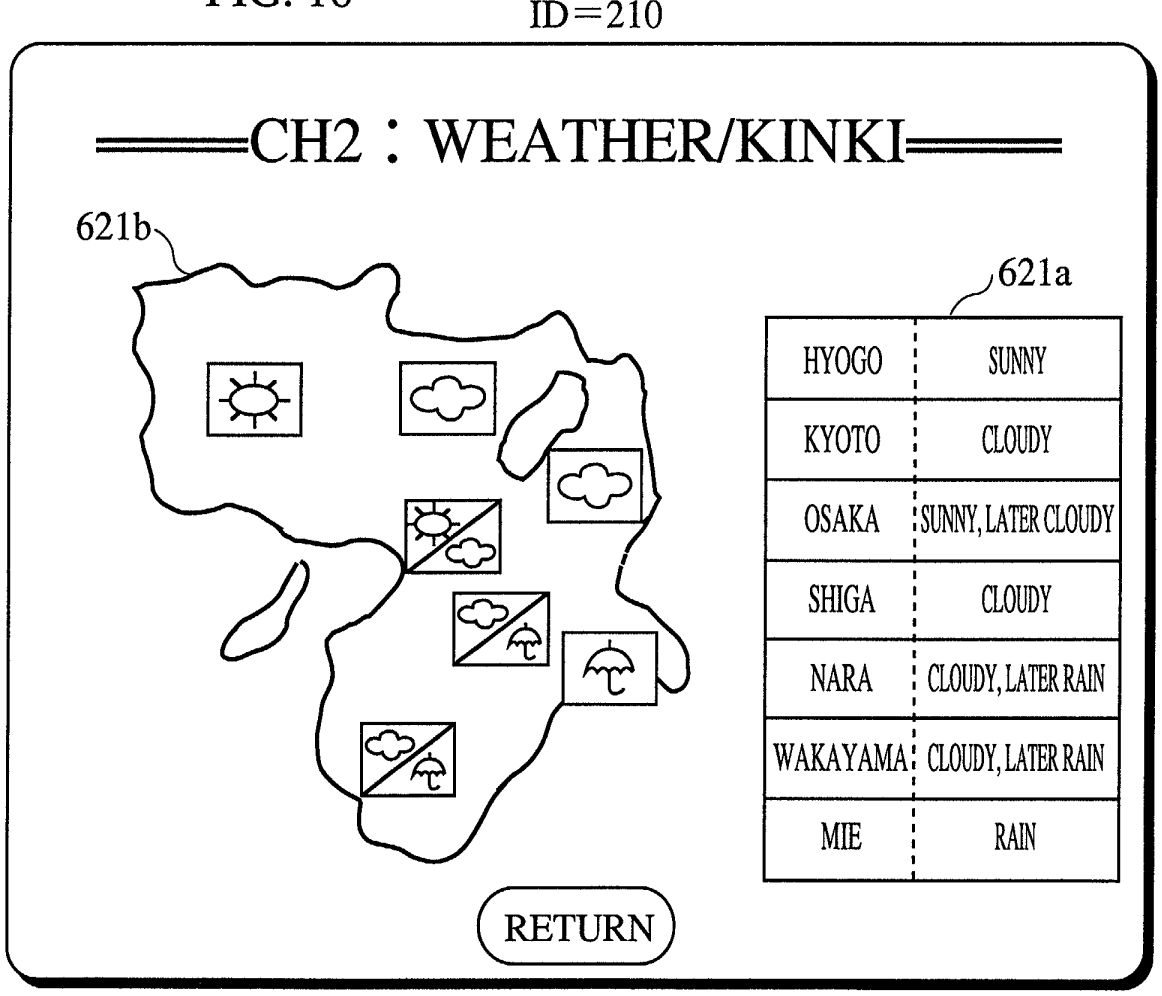

ID=210
CH2 : WEATHER/KINKI
621b
621a
HYOGO SUNNY
KYOTO CLOUDY
OSAKA SUNNY, LATER CLOUDY
SHIGA CLOUDY
NARA CLOUDY, LATER RAIN
WAKAYAMA CLOUDY, LATER RAIN
MIE RAIN
RETURN

FIG. 17

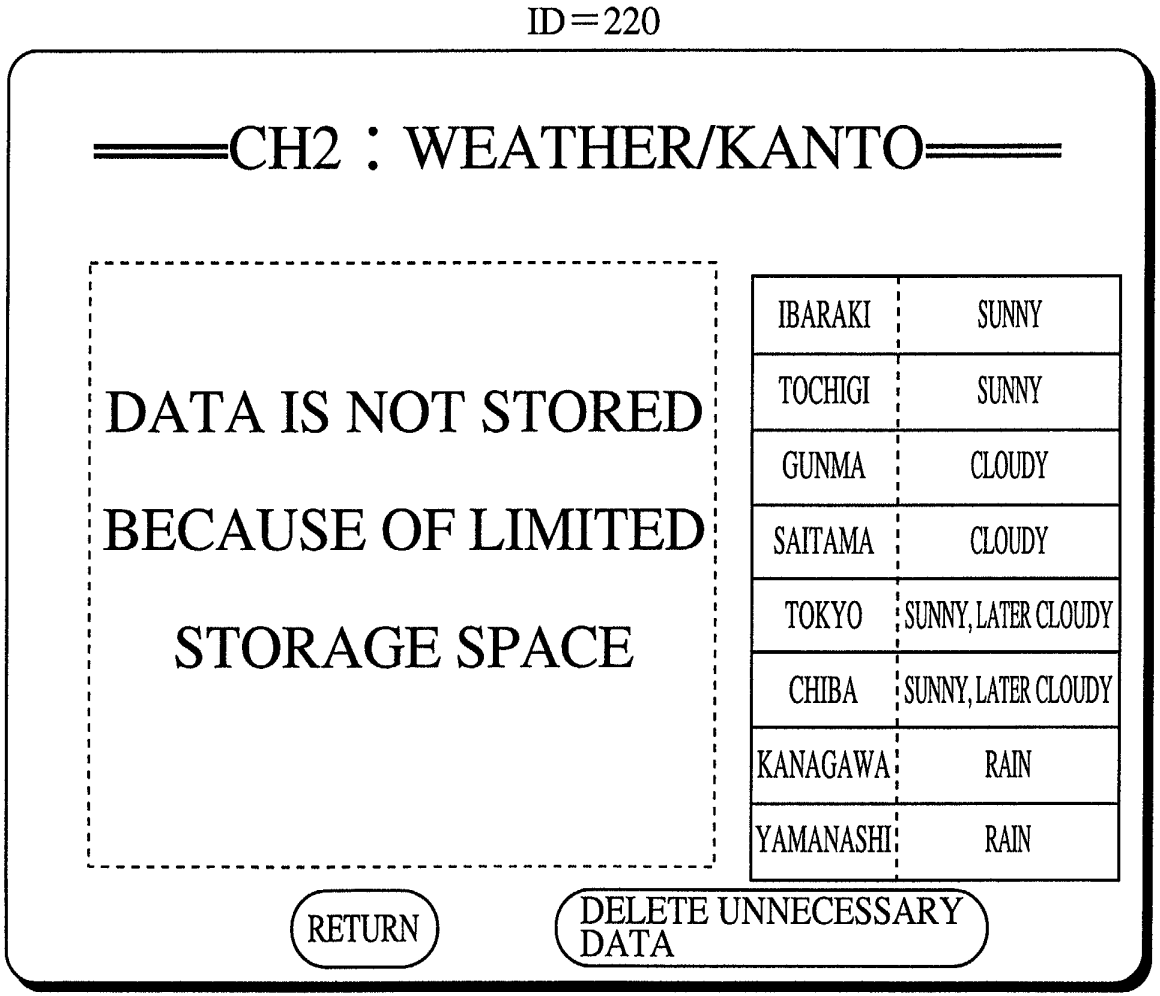
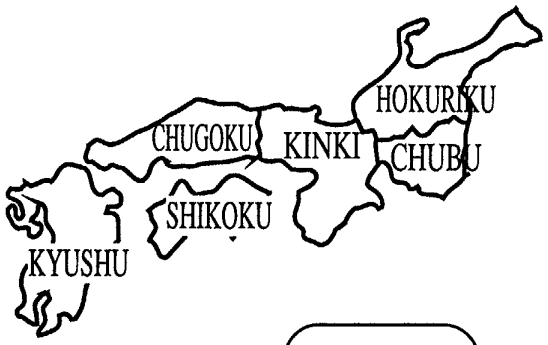

ID=220
CH2 : WEATHER/KANTO
DATA IS NOT STORED BECAUSE OF LIMITED STORAGE SPACE
IBARAKI SUNNY
TOCHIGI SUNNY
GUNMA CLOUDY
SAITAMA CLOUDY
TOKYO SUNNY, LATER CLOUDY
CHIBA SUNNY, LATER CLOUDY
KANAGAWA RAIN
YAMANASHI RAIN
RETURN
DELETE UNNECESSARY DATA

FIG. 18

ID=200

CH2 : WEATHER



RETURN

FIG. 19

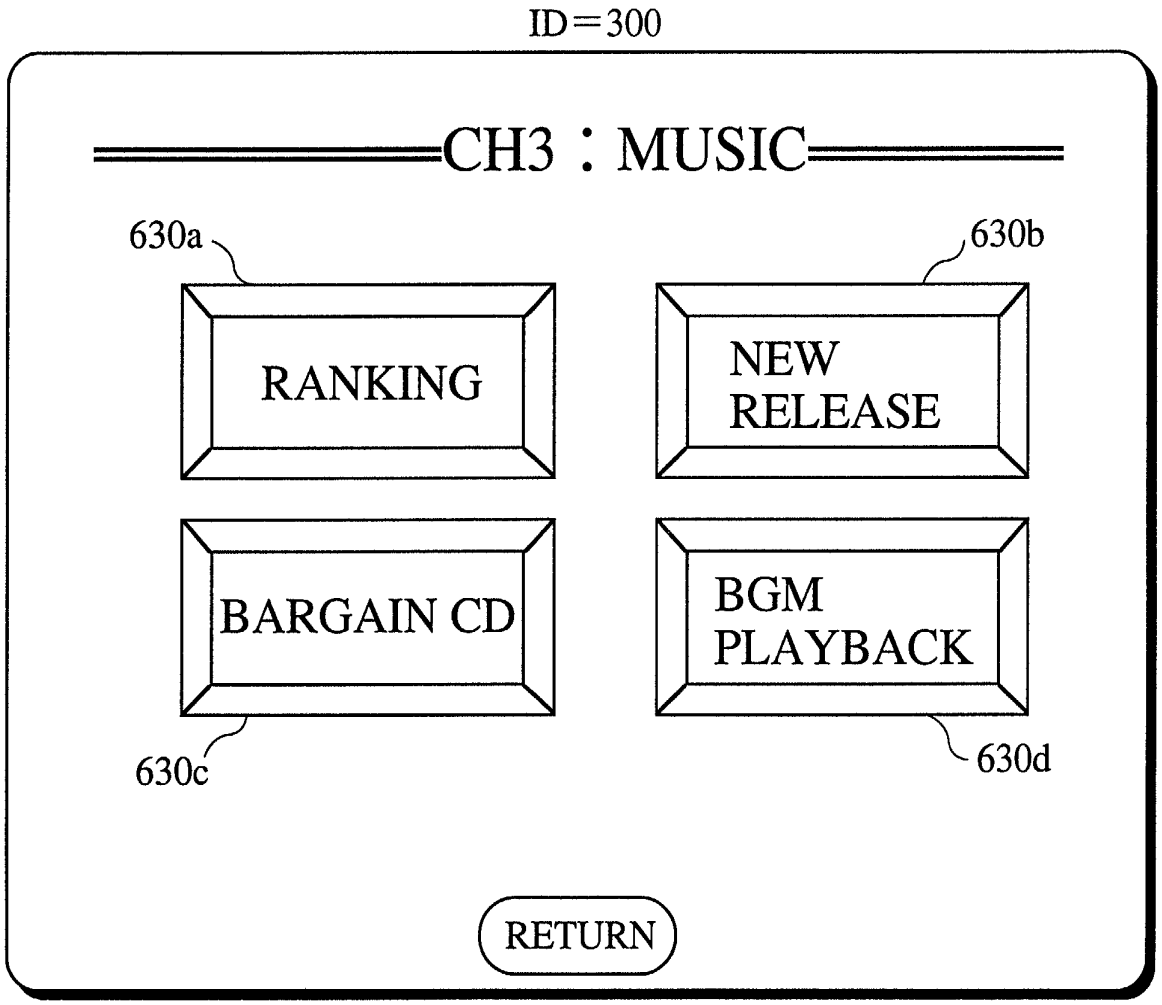

ID=300
CH3 : MUSIC
630a
RANKING
630b
NEW RELEASE
BARGAIN CD
630c
BGM PLAYBACK
630d
RETURN

FIG. 20

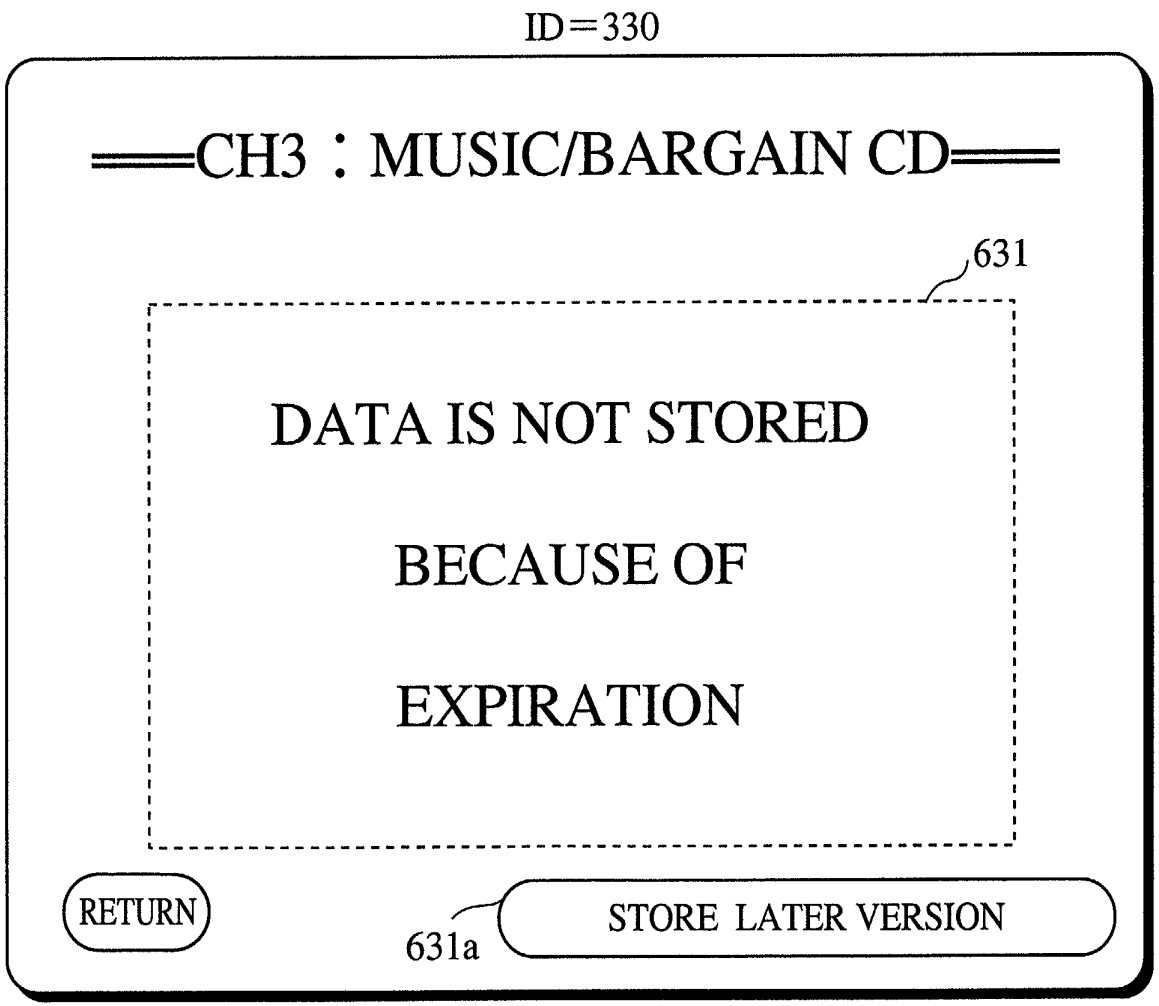
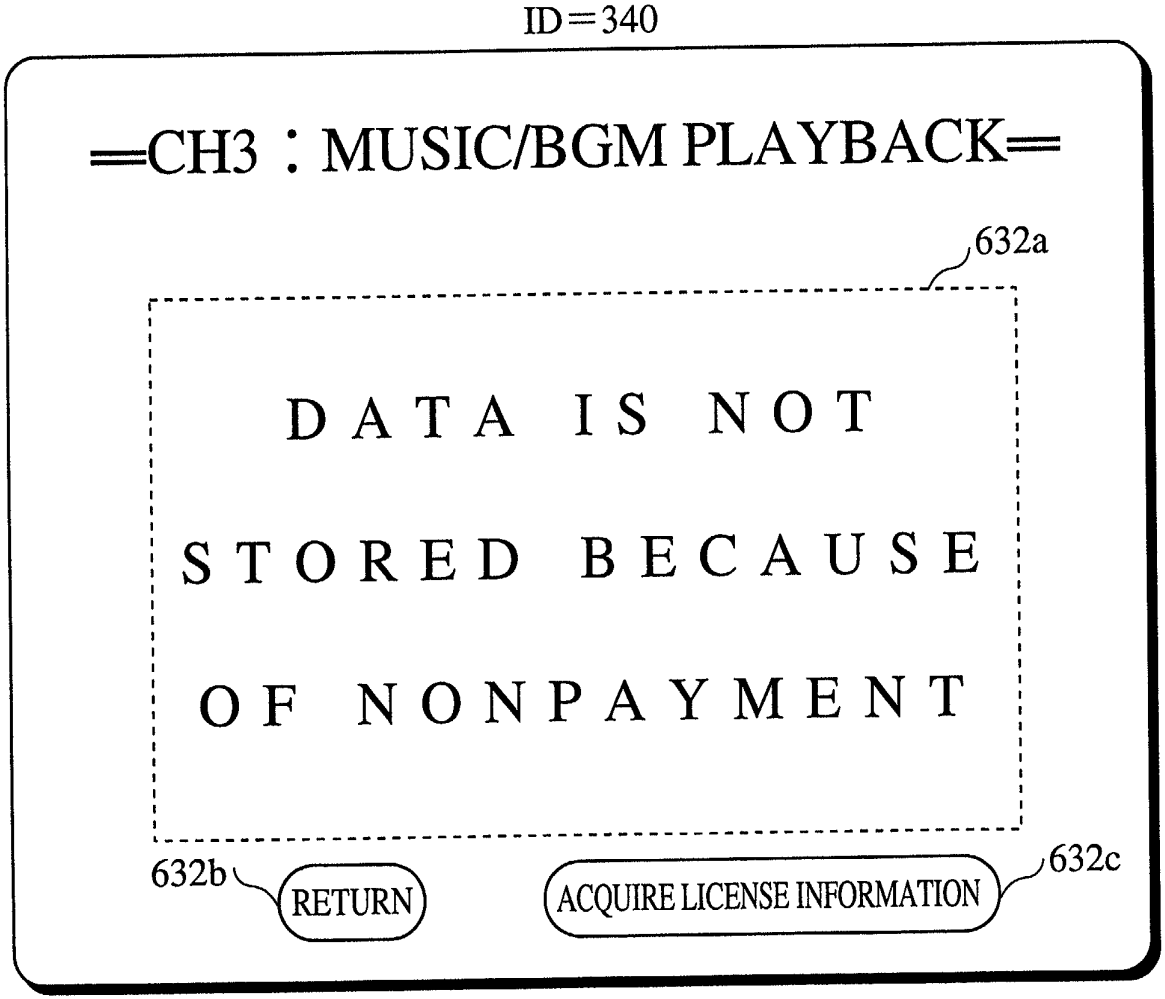

ID=330
CH3 : MUSIC/BARGAIN CD
631
DATA IS NOT STORED
BECAUSE OF
EXPIRATION
RETURN
631a
STORE LATER VERSION

FIG. 21


ID=340
=CH3 : MUSIC/BGM PLAYBACK=
632a
DATA IS NOT
STORED BECAUSE
OF NONPAYMENT
632b
RETURN
ACQUIRE LICENSE INFORMATION
632c